Elementary Particle Physics

As a child, I didn't aspire to much. Up until my sophomore year of high school, my life's plan was to make it big on Wall Street. However, when I took Chemistry that year, everything changed for me. I still don't know what it was; the teacher, the material, my enthusiasm for stepping up to the challenge, or maybe even just the fact that I was maturing, but whatever the cause, I became fascinated with science that year. I read that entire chemistry textbook, learning all I could about atomic structure, molecular bonding, and why things tended to do what they did. I couldn't get enough. The next year I took physics and AP chemistry and learned even more about atomic dynamics and about the forces that governed these interactions.

As I learned, however, I found myself a bit frustrated. I was told that the nucleus of an atom was composed of protons and neutrons, and that a "strong force" held these particles together. That, unfortunately, was where every textbook I read stopped. I was not satisfied with this. I found myself asking my physics teacher about this only for him to brush off the question as being physics that was out of my league. This didn't sit well with my curiosity.

I came to Purdue as an undergrad in nuclear engineering hoping to find answers to the questions that couldn't be answered in high school physics. What is this "strong" force that holds the nucleus together? Are protons, neutrons, and electrons all that is out there? Is there something more to matter than what I learned in chemistry? Freshman year, I took a physics class for physics majors, Modern Mechanics, to ensure I had the physics I had learned in high school down. My instructor, Dr. Virgil Banes, turned out to be the one who answered all of the questions I had about matter. Though Prof. Barnes wasn't the ideal professor for some, his lectures were introductions to everything I had hoped to learn in college. This made me realize that physics, not engineering, was where all of my questions would be answered, and I could not imagine going through life not trying to dig deeper and deeper into the matter in which the universe is made of.

It was then that I learned what elementary particle physics was and began my search into the topic. I took a class on electricity and magnetism the spring semester of my freshman year and was only more enthused to understand the make of the universe. Over the summer of 2013, I found a book online, Introductory to Particle Physics, by David Griffiths. As I began to read this book, I quickly realized that elementary particle physics was what I wanted to do with my life. Though I wasn't able to understand the physics in its entirety due to my lack of background, the material was fascinating to me. Though reading this book may have incurred the criticism of my friends who wondered why I was reading a textbook in my spare time, I was more entertained reading this book than any other I have ever read. This was what I was made to do.

In conclusion, it is my sincere desire to study elementary particle physics for the rest of my life. I find myself constantly searching for understanding of the constituents of matter and its means of interaction. I cannot imagine a future for myself where I am not searching for answers to these fundamental questions that I began asking my sophomore year of high school.